

Amendments to the Claims:

The following list of claims will replace all prior versions and listing of claims in the application:

Claims 1-18 (canceled)

Claim 19 (new): A method for controlling mercury emissions in an industrial process having a flue gas containing insoluble elemental mercury at a concentration of less than 50 $\mu\text{g}/\text{Nm}^3$, the method comprising:

- a) providing the flue gas to a wet scrubber having an aqueous alkali scrubbing liquor;
- b) mixing the flue gas with an oxidizing reagent containing chlorine in an amount sufficient to convert all of the insoluble elemental mercury into a soluble mercury species;
- c) mixing the flue gas with a sulfide species, said sulfide species provided in an amount sufficient to convert the soluble mercury species into insoluble mercuric sulfide;
- d) wherein step (b) and step (c) occur separately so as to avoid unwanted reactions directly between the chlorine and the sulfide species;
- e) creating a gas-liquid interface within the wet scrubber in order to: (i) entrain the insoluble mercuric sulfide generated by step (b) and step (c) within the scrubbing liquor and (ii) remove all mercury species from the flue gas; and
- f) evacuating the mercury-free flue gas from the wet scrubber.

Claim 20 (new): A method according to claim 19, wherein the amount of oxidizing reagent of step (b) is at least double a stoichiometric ratio normally required to oxidize all of the insoluble elemental mercury present in the flue gas.

Claim 21 (new): A method according to claim 20, wherein the mixing of flue gas and oxidizing reagent of step (b) and the mixing of flue gas and sulfide species of step (c) are performed using an interspatial header.

Claim 22 (new): A method according to claim 19, wherein the oxidizing reagent is an oxidizing acid selected from the group consisting of: Cl_2O , ClO_2 , ClO_4 , ClO , HClO , HClO_2 , HClO_3 , and HClO_4 , and salts thereof.

Claim 23 (new): A method according to claim 22, wherein the sulfide species is selected from the group consisting of: hydrogen sulfide, aqueous hydrosulfide ions and aqueous sulfide ions.

Claim 24 (new): A method according to claim 23, wherein the amount of oxidizing reagent of step (b) is at least double a stoichiometric ratio normally required to oxidize all of the insoluble elemental mercury present in the flue gas.

Claim 25 (new): A method according to claim 24, wherein the mixing of flue gas and oxidizing reagent of step (b) and the mixing of flue gas and sulfide species of step (c) are performed using an interspatial header.